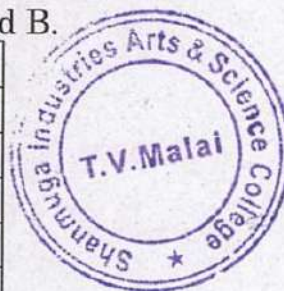


19. Write the formulae for calculating Skewness and Coefficient of Skewness. Also calculate Karl Pearson's Coefficient of Skewness from the following data :

|             |    |    |    |    |    |    |    |
|-------------|----|----|----|----|----|----|----|
| Marks :     | 15 | 18 | 20 | 24 | 27 | 29 | 30 |
| Frequency : | 11 | 15 | 22 | 17 | 10 | 8  | 7  |

20. Enumerate the merits and demerits of Spearman's Rank Correlation Coefficient. Also calculate the rank correlation coefficient for the following given marks of two Subjects A and B.

| Marks of Subject A | Marks of Subject B |
|--------------------|--------------------|
| 92                 | 86                 |
| 89                 | 83                 |
| 87                 | 91                 |
| 86                 | 77                 |
| 83                 | 68                 |
| 77                 | 85                 |
| 71                 | 52                 |
| 63                 | 82                 |
| 53                 | 37                 |
| 50                 | 57                 |



APRIL/MAY 2025

**23UECA12A/23UEAI12A — STATISTICAL METHODS AND ITS APPLICATIONS — I**

Time : Three hours

Maximum : 75 marks

**SECTION A — (10 × 2 = 20 marks)**

Answer ALL questions.

1. What is a bar graph?
2. Write the formula to calculate Deciles.
3. Define Mode.
4. Specify the Merits of Geometric Mean.
5. Write the general formula for Standard Deviation.
6. List any four advantages of Standard Deviation.
7. Differentiate between Variance and Skewness.
8. Compare Leptokurtic and Mesokurtic.
9. Define the term Regression Analysis.
10. Write the simple linear regression line equation.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the importance and Scope of Statistics.

Or

- (b) Discuss about the Histogram with its merits and demerits.

12. (a) Find the arithmetic mean for the following :

| Monthly Sales | Frequency |
|---------------|-----------|
| 100-120       | 15        |
| 120-140       | 35        |
| 140-160       | 50        |
| 160-180       | 60        |
| 180-200       | 30        |
| 200-220       | 10        |

Or

- (b) For the following list,  $n=19$ . Find the median.

24, 25, 28, 31, 33, 33, 36, 42, 42, 48, 51, 57, 57, 68, 75, 79, 79, 79, 85

13. (a) Classify the different measures of Dispersion.

Or

- (b) Find the Standard Deviation for the following :

| Class Interval | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
|----------------|------|-------|-------|-------|-------|
| Frequency      | 11   | 15    | 25    | 12    | 7     |

14. (a) Analyze about the Kelly's Measure of Skewness.

Or

- (b) Compute the first four moments about mean from the following data :

| Class Interval :    | 0-10 | 10-20 | 20-30 | 30-40 |
|---------------------|------|-------|-------|-------|
| Frequency ( $f$ ) : | 1    | 3     | 4     | 2     |

Table the computations of raw moments (Take  $A = 25$ ).

15. (a) Difference between Regression and Correlation.

Or

- (b) Describe about the Karl Pearson's coefficient of correlation.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe about the Graphical Representation of Data with suitable example.

17. Analyze about the Harmonic Mean and their properties.

18. Calculate (a) Quartile Deviation and (b) Mean Deviation from mean, for the following data :

| Marks :           | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |
|-------------------|------|-------|-------|-------|-------|-------|-------|
| No. of Students : | 6    | 5     | 8     | 15    | 7     | 6     | 3     |